

Technology Corner



Number 97-9

UDOT Research News

December, 1997

Quest for the Best -- "Top-Mounted Barrier Delineator"

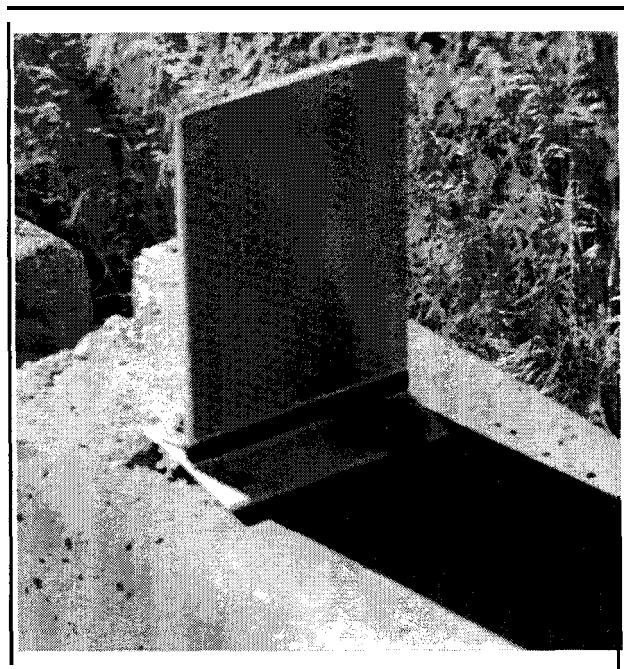
Concrete barrier is routinely used on high-speed arterials and freeways for protecting the traveler as well as directing the driver through curvilinear segments of roadway. Bridge parapet is an extension of concrete barrier which is fastened to the concrete bridge deck. Metal Guardrail is essentially an extension of concrete barrier. All these types of barrier must be highlighted with retroreflective elements in the form of "top mounted barrier delineators".

Problems with the top mounting barrier delineators have been reported by the UDOT Maintenance division. The major problem is that the delineators are being damaged from snowplow operations. During snow removal the delineators are being broken or permanently bent back by the force of the snow being pushed aside by the snow plows. This is not only a maintenance problem; but, also a safety problem due to reduced effective reflective area. Currently, the UDOT uses either a 0.075" rust-resistant steel or plastic L-shaped reflector attached to the concrete with general purpose caulk or metal hit anchors which require predrilling.

Six different brands of top-mounting barrier delineators were installed in July of 1996 on the East Bound Lane of I-80 near the Salt Lake International Airport. Approximately thirty replicates of each were tested. Among the six different products, two stand out from the group.

Flexx 20/20® (temporary applications)

The **Flexx 20/20** is manufactured by the Duraflex Corp. Of New Jersey. The



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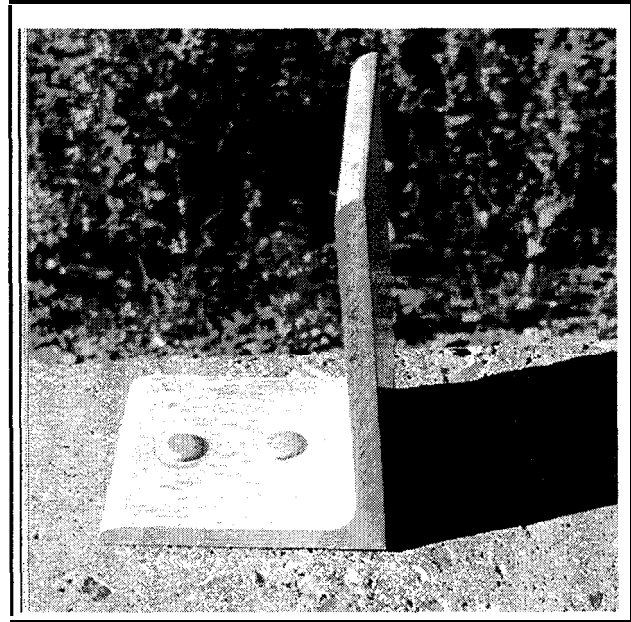
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product is a white T-shaped plastic delineator with a flexible hinge or rubber at the base. The unit may be securely attached to the top or side-mounted to the concrete barrier metal hit anchors after predrilling. The reflector has a dimension of 3"x4" and costs about \$2.75 per each delineator. This is a proprietary product with patent rights.

L-angle(permanentapplications1

This heavy extruded aluminum L-angle is 3/8" thick, but it is not commercially available; however, the Flasher Barricade of Utah, Inc. of Salt Lake City, Utah can provide this product if desired. The unit has a reflective surface of 3"x6". They are anchored using two 1.25" steel nail drive anchors and require predrilling. Once nailed these units become a permanent part of the barrier and cannot be removed.



Recommendation

The goal for this project was to find a more durable cost-effective top-mounting barrier delineator. From this field performance study, the two aforementioned delineators are recommended. The "Flexx 2020" for temporary installations and the "L-angle extruded aluminum" for permanent installations. These delineators are not affected by the impact of snow removal operations and are very strong barrier delineators. They cost approximately a dollar more per delineator than the current barrier delineator, but with the projected reduced maintenance costs, the life cycle value is more cost effective.

NOTE: A complete report detailing the six different brands tested is available by contacting the UDOT Research Division @ (801)965-4196: Refer to UDOT Report UT-97.07, entitled "*Barrier Delineators: Field Performance Study and Research Findings of Alternative Barrier Delineators*".

